

Attorney Docket No. IMMR-067/04US

PATENT

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

The application of Louis B. ROSENBERG *et al.*

Serial No.: 10/730,067

Examiner: Unassigned

Filed: December 9, 2003

Art Unit: 2674

Confirmation No. 2941

For: **METHOD AND APPARATUS FOR STREAMING FORCE VALUES TO A FORCE FEEDBACK DEVICE**

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## INFORMATION DISCLOSURE STATEMENT TRANSMITTAL

Enclosed is an Information Disclosure Statement and accompanying Form PTO/SB/08A for the above-identified patent application.

- In accordance with 37 C.F.R. §1.97(b), no additional fee for submission of the IDS is required.
- In accordance with 37 C.F.R. §1.97(c), also enclosed is:
  - the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p); or
  - a statement as specified in 37 C.F.R. §1.97(e).
- In accordance with 37 C.F.R. §1.97(d), a statement as specified in 37 C.F.R. § 1.97(e) and the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) are also enclosed.
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The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

Dated: October 13, 2004

Cooley Godward LLP  
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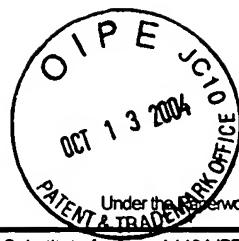
By:

Respectfully submitted,  
**COOLEY GODWARD LLP**



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Erik B. Milch  
Reg. No. 42,887



Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

1

of

3

### Complete if Known

Application Number	10/730,067
Filing Date	December 9, 2003
First Named Inventor	Louis B. Rosenberg
Art Unit	2674
Examiner Name	Unassigned

Attorney Docket Number

IMMR067/04US

### U.S. PATENT DOCUMENTS

Examiner	Cite No. <sup>1</sup>	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
		6,422,941		7/23/2002	Thorner et al.	
		6,160,489		12/12/2000	Perry et al.	
		6,111,577		8/29/2000	Zilles et al.	
		5,690,582		11/25/1997	Ulrich et al.	
		5,575,761		11/19/1996	Hajianpour	
		5,437,607		8/1/1995	Taylor	
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		5,283,970		2/8/1994	Aigner	
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		4,464,117		8/7/1984	Foerst	
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		4,127,752		11/28/1978	Lowthorp	
		2,972,140		2/14/1961	Hirsch	

Examiner Initials <sup>*</sup>	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
		JP	H2-185278		7/19/1990	Taito Corporation	
		JP	H4-8381		1/13/1992	Epoch Co. and Key-Planning Co.	
		JP	H7-24147		1/27/1995	Sega Corporation	
		JP	H5-192449		8/3/1993	Taito Corporation	

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<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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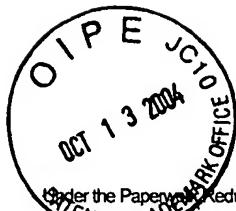
Substitute for form 1449A/PTO		<b>Complete if Known</b>		
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		Application Number	10/730,067	
(use as many sheets as necessary)		Filing Date	December 9, 2003	
		First Named Inventor	Louis B. Rosenberg	
		Art Unit	2674	
		Examiner Name	Unassigned	
Sheet	2	of	3	Attorney Docket Number
IMMR067/04US				

<b>OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS</b>		
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report</i> 1230, Naval Ocean Systems Center, San Diego, July 1988.
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory</i> , AAMRL-TR-90-039, August, 1990.
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," <i>DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1</i> , ASME 1994.
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 <sup>nd</sup> Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.
		LAKE, "Cyberman from Logitech," at <a href="http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html">http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html</a> , 1994.
		"Component Maintenance Manual With Illustrated Parts List, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 28 January 2002 (3 pages).
Examiner Signature		Date Considered

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(use as many sheets as necessary)

Sheet

3

of

3

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Art Unit	2674
Examiner Name	Unassigned

Attorney Docket Number

IMMR067/04US

### OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

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		"Technical Manual Overhaul Instructions With Parts Breakdown, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 15 July 1980 (23 pages).	
		SCANNELL, "Taking a Joystick Ride," Computer Currents, Boston Edition, Vol. 9, No. 11, November 1994	
		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance In Telepresence Tasks," Ph.D. Dissertation, Stanford University, June 1994.	

Examiner Signature		Date Considered	
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(use as many sheets as necessary)

Sheet

1

of 11

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Examiner	Cite No. <sup>1</sup>	Document Number Number Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		2002/0030663	03-2002	Tierling et al.	
		2,832,073	04-1958	Arkus et al.	
		2,906,179	09-1959	Bower	
		3,490,059	01-1970	Paulsen et al.	
		3,531,868	10-1970	Stevenson	
		3,659,284	04-1972	Rusch	
		3,863,098	01-1975	Mehr	
		3,875,488	04-1975	Crocker et al.	
		3,890,958	06-1975	Fister et al.	
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		3,944,798	03-1976	Eaton	
		4,125,800	11-1978	Jones	
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		4,703,443	10-1987	Moriyasu	
		4,704,909	11-1987	Grahn et al.	
		4,750,487	06-1988	Zanetti	

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(use as many sheets as necessary)				Filing Date	December 9, 2003
				First Named Inventor	Louis B. Rosenberg
				Art Unit	2674
				Examiner Name	Unassigned
Sheet	2	of	11	Attorney Docket Number	IMMR067/04US

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		4,769,763	09-1988	Trieb et al.	
		4,787,051	11-1988	Olson	
		4,791,934	12-1988	Brunnett	
		4,798,919	01-1989	Miessler et al.	
		4,800,721	01-1989	Cemenska et al.	
		4,803,413	02-1989	Kendig et al.	
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		4,819,195	04-1989	Bell et al.	
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		4,849,692	07-1989	Blood	
		4,879,556	11-1989	Duimel	
		4,888,877	12-1989	Enderte et al.	
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		4,907,970	03-1990	Meenen, Jr.	
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		4,942,545	07-1990	Sapia	
		4,945,305	07-1990	Blood	
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		4,949,119	08-1990	Moncrief et al.	
		4,961,138	10-1990	Gorniak	
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		5,012,231	04-1991	Felsenstein	
		5,040,306	08-1991	McMurtry et al.	
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		5,050,608	09-1991	Watanabe et al.	
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		5,088,046	02-1992	McMurtry et al.	
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		5,095,303	03-1992	Clark et al.	
		5,103,404	04-1992	McIntosh	

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		Number Kind Code <sup>2</sup> (if known)			
		5,107,080	04-1992	Rosen	
		5,116,051	05-1992	Moncrief et al.	
		5,126,948	06-1992	Mitchell et al.	
		5,128,671	07-1992	Thomas, Jr.	
		5,131,844	07-1992	Marinaccio et al.	
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		5,228,356	07-1993	Chuang	
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		5,251,127	10-1993	Raab	
		5,251,156	10-1993	Heier et al.	
		5,259,120	11-1993	Chapman et al.	
		5,259,894	11-1993	Sampson	
		5,262,777	11-1993	Low et al.	

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		5,264,768	11-1993	Gregory et al.	
		5,275,565	01-1994	Moncrief	
		5,289,273	02-1994	Lang	
		5,296,846	03-1994	Ledley	
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		5,589,828	12-1996	Armstrong	

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				Application Number	10/730,067
(use as many sheets as necessary)				Filing Date	December 9, 2003
				First Named Inventor	Louis B. Rosenberg
				Art Unit	2674
				Examiner Name	Unassigned
Sheet	5	of	11	Attorney Docket Number	IMMR067/04US

<b>U.S. PATENT DOCUMENTS</b>					
Examiner	Cite No. <sup>1</sup>	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number	Kind Code <sup>2</sup> (if known)		
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		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
		JP	4-34610				
		GB	2254911				
		WO	9502801				
		WO	9642078				
		EP	0626634	A2			

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		WO	9532459				
		WO	9712357				
		WO	9720305				
		WO	9721160				
		WO	9731333				

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